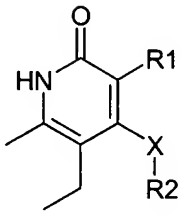
CLAIMS

1. A 5-ethyl-6-methyl-2-pyridinone derivative compound according to general formula I,

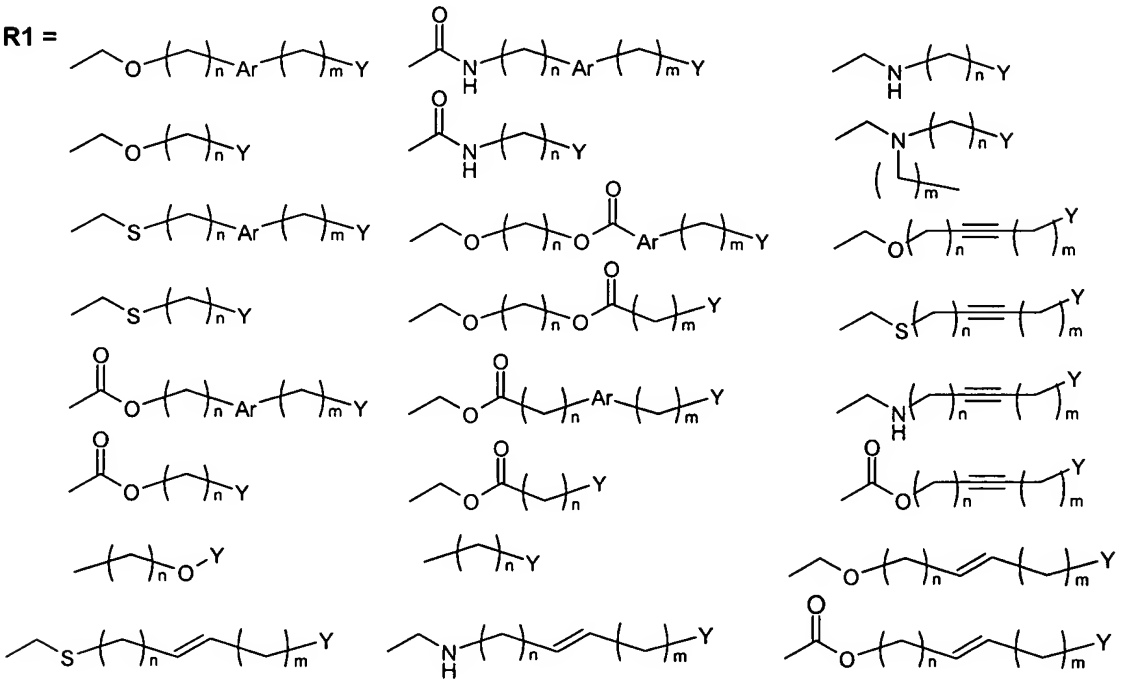


(formula I)

wherein

X = O, S, NH, C=O, (C_nH_{2n}), $(C_nH_{2n})O$, $O(C_nH_{2n})$, $(C_nH_{2n})S$, $S(C_nH_{2n})$ with n = 1-4

R1 =

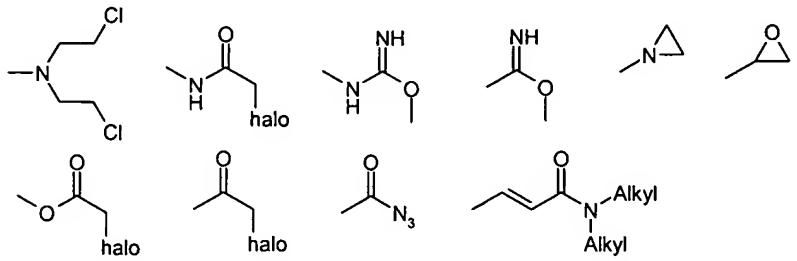


with n, m = 0 - 8

Ar = Aromatic ring selected from : phenyl, pyridyl, thiazolyl, furanyl, thiophenyl, benzofuranyl, benzothiophenyl, benzothiazolyl, imidazolyl, indolyl,
each optionally substituted with up to 4 substituants selected from :
halo, hydroxy, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} hydroxyalkyl, C_{1-4} alkylamino, amino, C_{1-4} aminoalkyl, C_{1-4} alkylcarbonyl, C_{1-4} dialkylamino, azido

Y = alkyl, amino, nitro or

Y = H, halo, alkylamino, dialkylamino, nitrile, hydroxy, C_{1-6}alkyloxycarbonyl, C_{1-6}alkylcarbonyloxy, C_{5-7} cycloalkyl optionally substituted with up to 4 substituants selected from : halo, hydroxy, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} hydroxyalkyl, C_{1-4} alkylamino, amino, C_{1-4} aminoalkyl, C_{1-4} alkylcarbonyl, C_{1-4} dialkylamino, azido, nitrile;
or Y can be :



R2 = C_{7-9} cycloalkyl;

C_{5-8} cycloalkyl substituted with up to 4 substituants;

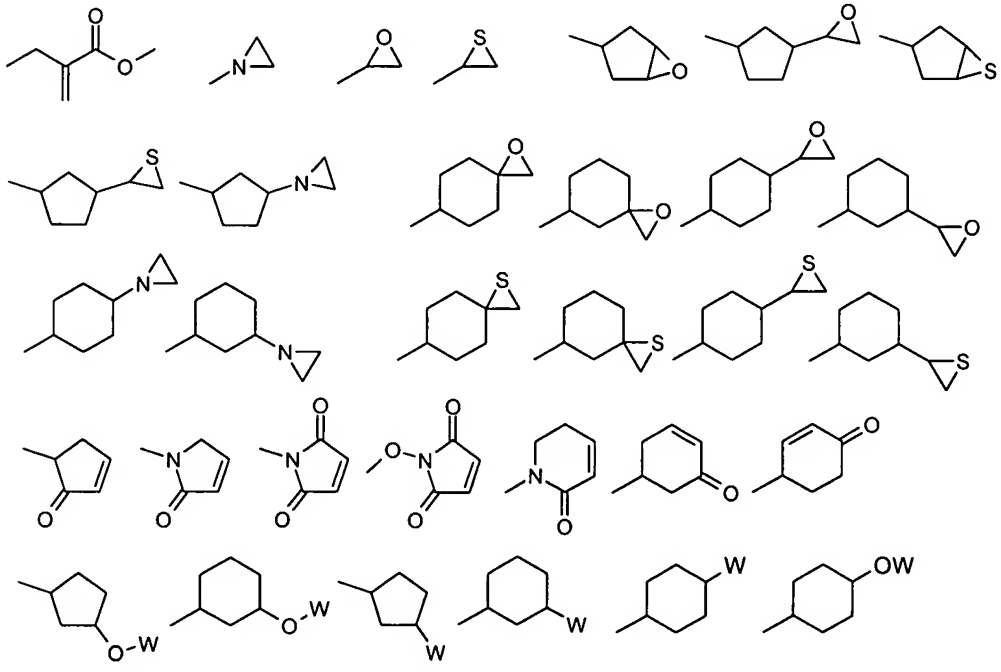
C_{5-8}cycloalkenyl optionally substituted with up to 4 substituants;

C_{5-8}aliphatic heterocycle optionally substituted with up to 4 substituants;

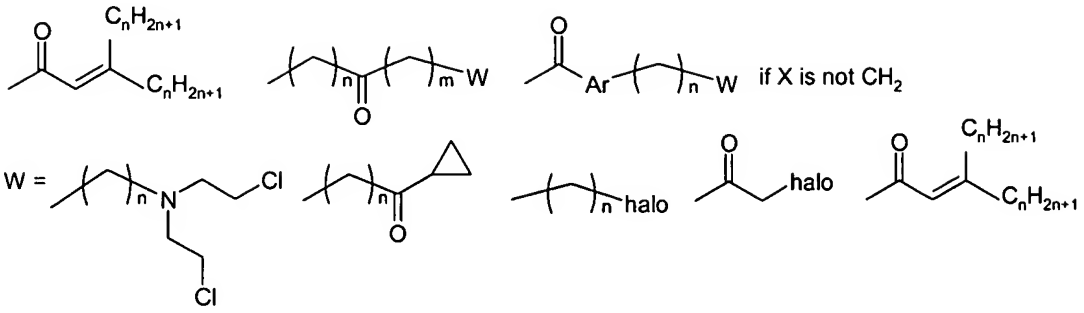
C_{6-9}bridged cycloalkyl optionally substituted with up to 4 substituants;

C_{6-9}bridged cycloalkenyl optionally substituted with up to 4 substituants;

substituants selected from :
halo, hydroxy, C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} hydroxyalkyl, C_{1-4} alkylamino, amino, C_{1-4} aminoalkyl, C_{1-4} alkylcarbonyl, C_{1-4} dialkylamino, azido, CN;



Or R2 can be :



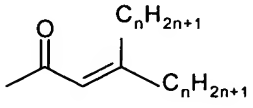
n, m = 0 - 8

2. The compound according to claim 1 which comprises a substituted cycloalkyl group as R2 in position 4 of the pyridinone ring.

3. The compound according to claim 2 wherein the substituted cycloalkyl group is a 3,5-dimethylcyclohexyl moiety.

4. The compound according to claim 1 which comprises a C7-9 cycloalkyl group as R2 in position 4 of the pyridinone ring.

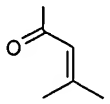
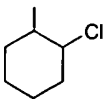
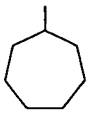
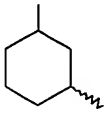
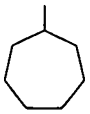
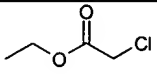
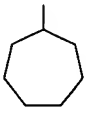
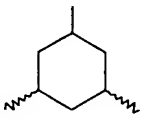
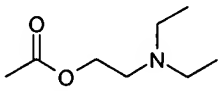
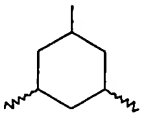
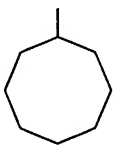
5. The compound according to claim 1 wherein R2 has the formula XII

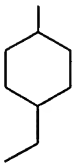
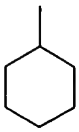
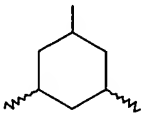
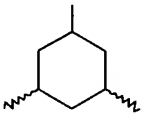
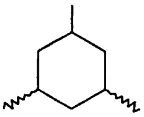
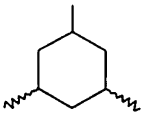
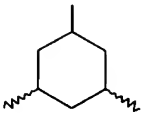
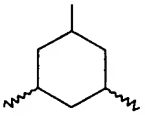
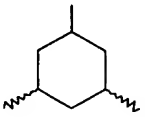
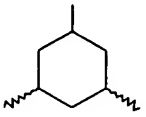


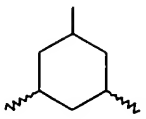
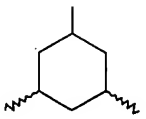
(formula XII)

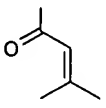
with n=0 - 8.

6. The compound according to claim 1 which is selected from the group consisting of **M18**, **Z12**, **Z25**, **Z30**, **Z32**, **Z33**, **Z37**, **Z37inv**, **Z53**, **Z54**, **Z55**, **Z57**, **Z45inv**, **Z91inv**, **Z96inv**, **Z114**, **Z121**, **Z122**, **Z150**, **Z153**, **Z154** and **Z167**, wherein X, R1 and R2 are as indicated below:

N°	X	R1	R2
M18	O	CO_2Et	
Z12	O	CO_2Et	
Z25	O	CO_2Et	
Z30	O	CO_2Et	
Z32	O	CH_2OH	
Z33	O		
Z37	O	CO_2Et	
Z53	O		
Z54	O	CO_2Et	

Z55	O	CO_2Et	
Z57		CO_2Et	
Z45inv	O	CH_2OH	
Z91inv	O	NO_2	
Z96inv	O	NH_2	
Z114	O	CH_2SCOMe	
Z121	O	$CH_2S(CH_2)_2OH$	
Z122	O	$CH_2S(CH_2)_2OCOCH_2Cl$	
Z150	O	NMe_2	
Z153	O	CH_2N_3	

Z154	O	Me	
Z167	O	Et	

7. A compound according to claim 1, with X = O, R1 = CO_2Et and R2 =  .

8. A pharmaceutical composition comprising the compound according to the claim 1 and an acceptable carrier and/or diluent.

9. The composition according to claim 8 further comprising another anti-viral agent.

10. The composition according to claim 9, wherein the said anti-viral agent is Nevirapine.

11. A method for the treatment and/or the prevention of HIV-1 infections in a mammal, which comprises the step of administrating the compound of claim 1 or the composition of claim 8 to the mammal.

12. The method according to the claim 11 for the treatment and/or prevention of HIV-1 infections by a strain resistant to at least one anti-viral agent.

13. The method of claim 12 wherein said anti-viral agent is Nevirapine.

14. A method for obtaining an irreversible anti-HIV-1 compound, which comprises the steps of:

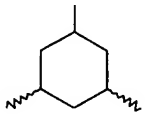
- selecting an anti-HIV-1 compound that interacts with a binding site of an HIV-1 enzyme,
- introducing a chemical modification in the structure of the anti-HIV-1 compound that allows the formation

of at least one covalent bond between the compound and an amino acid of said HIV-1 enzyme.

15. The method of claim 14, wherein the HIV I binding site is the allosteric site of HIV I reverse transcriptase.

16. The method of claim 1 wherein the anti-HIV-1 compound is an NNRTI.

17. An irreversible NNRTI obtainable by the method of claim 16.

18. The irreversible NNRTI according to claim 17 which is a compound (Z122) according to formula I with X = O, R1 = $CH_2S(CH_2)_2OCOCH_2Cl$ and R2 =  .